

BILLY CLAY, DVM, Volume I, 3-24-09

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IN THE UNITED STATES DISTRICT COURT FOR THE  
NORTHERN DISTRICT OF OKLAHOMA

W. A. DREW EDMONDSON, in his )  
capacity as ATTORNEY GENERAL )  
OF THE STATE OF OKLAHOMA and )  
OKLAHOMA SECRETARY OF THE )  
ENVIRONMENT C. MILES TOLBERT, )  
in his capacity as the )  
TRUSTEE FOR NATURAL RESOURCES )  
FOR THE STATE OF OKLAHOMA, )  
Plaintiff, )  
vs. ) 4:05-CV-00329-TCK-SAJ  
TYSON FOODS, INC., et al, )  
Defendants. )

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VOLUME I OF THE VIDEOTAPED  
DEPOSITION OF BILLY CLAY, PhD, produced as a  
witness on behalf of the Plaintiff in the above  
styled and numbered cause, taken on the 24th day of  
March, 2009, in the City of Tulsa, County of Tulsa,  
State of Oklahoma, before me, Lisa A. Steinmeyer, a  
Certified Shorthand Reporter, duly certified under  
and by virtue of the laws of the State of Oklahoma.



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1 E. coli in poultry workers?

2 A Not in humans. I've done it lots in animals.

3 Q When?

4 A Oh, starting about 1975 through 1998.

5 Q Are any of those studies peer reviewed and 09:33AM  
6 published?

7 A All of those studies were for proprietary  
8 purposes.

9 Q My question is, were any of those studies peer  
10 reviewed and published? 09:33AM

11 A The answer is no.

12 Q Let me ask you some general questions, sir.  
13 Do you prefer to not drink water that has taste and  
14 odor?

15 A Well, if I did, I'd have to quit drinking 09:34AM  
16 water in Stillwater, and I would have had to have  
17 done it about 45 years ago.

18 Q So it's okay with you to taste -- have a taste  
19 and odor to your water at this point?

20 A I don't find that there is a taste and odor, 09:34AM  
21 although it exists in the minds of some.

22 Q Do you personally value the attribute of clear  
23 and colorless water?

24 A Clear and colorless water?

25 Q Yes, sir. 09:34AM

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1 is that what I understand you to say?

2 A Well, that was the context of your question as  
3 I understood it, that that's what you were trying to  
4 get me to focus on, and so I responded accordingly.

5 Q Okay. So -- but my question is, you've not 10:24AM  
6 studied whether or not runoff occurs either, not  
7 just water quality measurements?

8 A I can tell you that wherever rain falls and  
9 streams occur, there is some kind of runoff.

10 Q Okay, and in that runoff will it contain the 10:25AM  
11 constituents of poultry manure that has been land  
12 applied?

13 A It may or may not.

14 Q Okay. Did you, sir, have an opportunity to  
15 read Dr. Dicks' testimony in his deposition in this 10:26AM  
16 case?

17 A I did not read his testimony. Oh, wait a  
18 minute, wait a minute. His deposition, I did read  
19 some excerpts from it, yes, I did.

20 Q Okay. Did you look at any of the exhibits in 10:26AM  
21 his deposition given in this case?

22 A I don't believe I did.

23 Q Are you familiar with a Dwayne Edwards and a  
24 T. C. Daniel?

25 A Yes. 10:27AM

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1 Q And are you familiar with their published  
2 literatures about runoff in the Illinois River  
3 watershed?

4 A I'm familiar with their published literature  
5 on simulated runoff.

10:27AM

6 Q Okay, and you're saying it's simulated because  
7 they might simulate rainfall; correct?

8 A Yes, as well as manure application.

9 Q Okay. Are you familiar with a gentleman by  
10 the name of Heathman who did a similar study on  
11 runoff in 1995?

10:27AM

12 A Heathman?

13 Q Yes, sir.

14 A I don't remember that one.

15 Q Are you familiar with a gentleman by the name  
16 of Pote, P-O-T-E, who in 2005 did a runoff  
17 simulation or study on Bermuda grass?

10:27AM

18 A That one is vaguely familiar, but I don't  
19 remember the details of that.

20 Q Okay. Are you familiar with a gentleman by  
21 the name of Schroeder and others who in 2004 did a  
22 runoff study off of fescue?

10:27AM

23 A Vaguely.

24 Q Are you familiar with Dr. Sharpley who in 1999  
25 did a study about runoff?

10:28AM

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1 Q So did you then adjust the weight based upon  
2 the handbook, Exhibit 7, generated by that animal  
3 unit that you just described?

4 A Yes.

5 Q All right. So for the animal unit, it would 10:57AM  
6 exceed the 63 pounds?

7 A That's correct.

8 Q All right. So on a comparison basis, is --  
9 did you use the animal waste -- I'm sorry, the  
10 animal unit based upon a thousand pounds live weight 10:57AM  
11 or just upon those -- the beef, the beef cow, the  
12 cow, the heifer and replacement heifers alone?

13 A What we did is when we computed the heifers  
14 contributor, bull contributor, we wound up with a  
15 1.3 animal unit level for the beef animal, beef cow 10:57AM  
16 et al, which then, therefore, was translated on the  
17 basis of a thousand pounds body weight.

18 Q Okay. So in doing that calculation, you  
19 didn't break it down to how many bulls there are,  
20 how many cows there are and how many heifers there 10:58AM  
21 are at a given time in the watershed, did you, and  
22 then calculate them per thousand pounds?

23 A No. What we did at that time was used the  
24 standard data of what an animal unit represents in a  
25 cow-calf herd. 10:58AM

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1 Q And when you say standard data, what is the  
2 authority and source of the standard data --

3 A Well, that --

4 Q Let me finish my question.

5 A Okay. Sorry.

6 Q -- to use a 1.3 animal unit as you have used?

7 A The standard data is that that's what the  
8 agricultural economists use as their basis for  
9 making those decisions of comparison, and so in that  
10 I had an agricultural economist doing this work for 10:59AM  
11 me, he used that standard data, dataset, that they  
12 use it every day they're making computations  
13 pertaining to beef cattle.

14 Q Do you know that for a fact or is that just  
15 something you've been told? 10:59AM

16 A Well, I've seen it many other -- in many other  
17 cases. I've seen it in the NRCS data as well.

18 Q You've seen the definition of an animal unit,  
19 in talking about beef, to be 1.3 units?

20 A Yes. 10:59AM

21 Q And can you give me any written authority that  
22 states that as a standard?

23 A From my recall, I can't, but if it's  
24 necessary, I'll look it up and get it for you.

25 Q And who is the ag economist that you relied on 10:59AM

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1 in order to formulate this 1.3 unit?

2 A His name is Raleigh Jobes.

3 Q Is he still with Oklahoma State University?

4 A He's emeritus.

5 Q Did he do the calculations for you? 11:00AM

6 A Yes.

7 Q Looking again at Exhibit 7 and the

8 characteristics of the beef weight as excreted and

9 the poultry waste as excreted in Tables 4-8 and

10 4-14, would you agree with me that the poultry 11:00AM

11 waste, as excreted for total solids, exceeds that of

12 beef weight -- waste characteristics as excreted?

13 A Excuse me, sir. Give me the pinpoint again.

14 4-8 --

15 Q Table 4-8 and Table 4-14. 11:01AM

16 A And do you have the Bates number there?

17 Q 150 and 146.

18 A 146, and the question then is --

19 Q What's the general -- well, the total solids

20 listed there are anywhere from 11.6 to 13; do you 11:01AM

21 agree?

22 A On beef cattle, yes, sir.

23 Q Yes, sir, and if you compare that to the

24 poultry waste characterization as excreted on Page

25 150, you'll find the total solids there are all 25 11:01AM

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1 You were asking me essentially what is the dry  
2 weight of the excreted manure, which is the -- which  
3 is the total solids in this case, and it was 13  
4 compared to 25.

5 Q And you understand that we're not talking 11:04AM  
6 about poultry litter or bedding material when we're  
7 talking about excreted waste, are we?

8 A That's the way I understood it.

9 Q Okay. For purposes of your making opinions in  
10 this case, you've not conducted any field study or 11:04AM  
11 independent analysis of the characteristics of  
12 waste; is that true?

13 A In the Illinois River watershed?

14 Q No. For any animals that you're opining on  
15 with regard to your report. 11:04AM

16 A No, not in this case, I have not.

17 Q So it's fair to say you've relied on certain  
18 resources that you chose to use in order to make  
19 those comparisons; true?

20 MR. GRAVES: Object to the form. 11:05AM

21 A Well, you gave me one of those and said is  
22 this, and I said yes, it's one of them.

23 Q It's one of them, but that's my point. You've  
24 not done anything independently; you're relying on  
25 resources for the information that you're using to 11:05AM

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1 compare characteristics of waste when giving an  
2 opinion in this case?

3 A And knowledge and experience, as well as that  
4 of Dr. Raleigh Jobes.

5 Q Okay, and your knowledge and experience is not 11:05AM  
6 based upon any independent analysis of either beef  
7 or poultry waste, as excreted, characteristics, is  
8 it?

9 A No. My knowledge and experience is I've been  
10 involved in studies in which we were measuring dry 11:05AM  
11 weight.

12 Q Okay. Other than dry weight, have you been  
13 involved in any other studies with regard to the  
14 characteristics of beef or poultry manure as  
15 excreted? 11:06AM

16 A Yes. Well, yes, more than dry weight. There  
17 have been instances where we're interested in the  
18 total nutrients, particularly the major nutrients.

19 Q And did you in fact conduct the study yourself  
20 to evaluate the total nutrients in waste? 11:06AM

21 A Participated in.

22 Q Okay, and was that paper published and peer  
23 reviewed?

24 A It wasn't for the purpose of the paper. It  
25 was for the purpose of approval of a pharmaceutical 11:06AM

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1 A I'm trying to recall whether it was past 3.5  
2 or not. I can't remember. Seems to me it was  
3 closer to 3.

4 Q You would agree, sir, that in making your  
5 report and opinions contained in that report, you  
6 did not use the actual poultry production numbers  
7 that are provided by the integrators?

11:58AM

8 A Let me make sure I understand your question.  
9 I think you asked me did I use the production  
10 numbers provided by the integrators, and the answer  
11 was that I used this in a comparative basis because  
12 I made estimates, as well as other people who have  
13 made estimates, and I used it as part of the  
14 comparator.

11:58AM

15 Q The primarily -- the primary tool that you  
16 relied on in establishing poultry production numbers  
17 was the 2002 Ag Census, was it not?

11:59AM

18 A Yes, that's correct.

19 Q Do you agree that that Ag Census does not  
20 provide bird production by integrators?

11:59AM

21 A Yes, I do.

22 Q And do you agree that it provides the census  
23 information by either a state level, county level or  
24 a ZIP Code?

25 A Yes.

11:59AM

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1 Q It does not provide census information based  
2 upon watersheds, does it?

3 A No.

4 Q Do you agree that -- it was necessary -- well,  
5 let me ask you this way: Who made the assumptions  
6 and calculations for the bird numbers; was that Mr.  
7 Jobes or was that you?

11:59AM

8 A Mr. Jobes made the calculations and I made the  
9 assumptions.

10 Q Okay. Had you ever performed the task of  
11 calculating bird production in the manner that you  
12 did it in this case before?

12:00PM

13 A Not exactly in this manner, no.

14 Q Okay. Tell me what other manner you've  
15 employed in calculating bird production numbers.

12:00PM

16 A Just -- just using census data and tabulating.

17 Q And what -- was there a confined area -- a  
18 defined area that you were requested to make those  
19 calculations for?

20 A Well, the Illinois River watershed, this case.

12:00PM

21 Q I'm sorry. I misspoke then. I misunderstood  
22 what you said. Let me ask it this way: Have you,  
23 other than in this case, prepared calculations on  
24 the production of poultry for any other location  
25 than the IRW?

12:00PM

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1 Q Let me rephrase it then.

2 A Okay.

3 Q Are there any other integrators besides the  
4 defendants in this case raising poultry in this  
5 watershed?

12:04PM

6 A I don't know of any.

7 Q Did you make any inquiry to determine if there  
8 was?

9 A I did, but that was cursory also.

10 Q How did you go about doing that inquiry?

12:04PM

11 A I don't remember who it was I was asking, but  
12 I think I was asking some people at Oklahoma State  
13 University that Raleigh Jobes knew, an economist who  
14 had spent some time looking at production in the  
15 watershed.

12:04PM

16 Q Tell the court why you didn't use the actual  
17 poultry production numbers prepared by the  
18 defendants for your work in this case.

19 A Because I was using the census data of the  
20 year 2002 for all other information, and as we  
21 viewed it, it was only appropriate to use the same  
22 census data for the poultry numbers as well.

12:05PM

23 Q Do you know that the information, in looking  
24 at the interrogatory responses of the defendants,  
25 provided 2002 data?

12:05PM

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1 A Yes, I do know that.

2 Q All right, and so even though the 2002 data  
3 was available from the integrators, tell the court  
4 why you didn't use that but instead used the Ag  
5 Census.

12:05PM

6 A I answered that for you earlier, but I'll  
7 answer it again. I said I used it as comparator  
8 data, along with all of the other people who had  
9 made estimates that I had available to me, and it  
10 was comparator data, just like the Smith, Alexander  
11 data was comparator data. So that was the reason.  
12 I was using a format that I had chosen -- we had  
13 chosen, and I was comparing it to others.

12:06PM

14 Q Okay, and, again, though, the principal method  
15 in which you made your calculation relied on  
16 analyzing ZIP Codes in the Illinois River watershed  
17 and the Ag Census that is reported pursuant to those  
18 ZIP Codes; is that correct?

12:06PM

19 A That is correct.

20 Q Let me just -- so we can identify it on the  
21 Record, let me hand you Exhibit 17. I'll represent  
22 to you that the first page is a summary page along  
23 with the second page, but I've prepared basically a  
24 compilation of responses provided by the defendants  
25 in this case.

12:06PM

12:07PM

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1 A No.

2 Q Have you been told by any of the poultry  
3 integrator defendants they have not applied any  
4 poultry waste in the Illinois River watershed now or  
5 in the past from their operations?

12:08PM

6 A No.

7 Q What effort did you undertake to quantify the  
8 amount of poultry waste that is generated in the  
9 Illinois River watershed?

10 A Well, I made an estimate of the total poultry  
11 production for 2002, and I used the sources of  
12 information that we previously described in the  
13 various documents that show production of manure  
14 and/or litter, as well as constituents, and made  
15 those calculations accordingly.

12:09PM

16 Q Were you provided any waste calculation  
17 numbers from the poultry integrator defendants that  
18 they had compiled from history?

19 A No.

20 Q Were you provided any data from the poultry  
21 integrator defendants to assist you in quantifying  
22 the amount of poultry waste generated in the  
23 Illinois River watershed?

12:10PM

24 A No.

25 Q Did you look at any data to determine what

12:10PM

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1 MS. LONGWELL: Object to form, asked and  
2 answered.

3 A I agree that in order for bacteria to survive  
4 anywhere, desiccation is a negative and pH can be a  
5 negative and sunlight can be a negative. So to try  
6 to answer your question, yes, moisture is important.

04:33PM

7 Q Did you, sir, undertake or any other defendant  
8 experts to your knowledge undertake any study with  
9 regard to the fate and transport of bacteria in the  
10 Illinois River watershed?

04:34PM

11 A Not to my knowledge.

12 Q Do you know whether or not any modeling  
13 efforts were made to determine the fate and  
14 transport of bacteria in the Illinois River  
15 watershed?

04:34PM

16 A Not to my knowledge.

17 Q Let me hand you Exhibit 46, Dr. Clay. I think  
18 you'll recognize that document.

19 A Yes.

20 Q Is this a document actually prepared by you  
21 for the preliminary hearing conducted back in  
22 February and March?

04:34PM

23 A It appears to be.

24 Q Did anyone assist you in preparing this  
25 document?

04:35PM

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1 A Yes.

2 Q Who did?

3 A Dr. Raleigh Jobes.

4 Q What part of this document did he contribute  
5 to?

04:35PM

6 A The calculation of the numbers.

7 Q So he just did the math; is that what you're  
8 saying?

9 A Correct.

10 Q And who supplied the numbers for him to be  
11 adding up?

04:35PM

12 A Well, as explained earlier, we used a similar  
13 approach, the differences here are that in this  
14 phase, as I explained earlier in our -- in the  
15 deposition, we relied on some TMDL studies that --

04:35PM

16 for the source of much of that information, and we  
17 used the 1998-'99 ASAE data to make the  
18 calculations, and then when the Canadian River study  
19 came to -- into being that was approved by the EPA,  
20 then we moved to the 2003 dataset, and they were  
21 quite different, particularly in fecal coliform  
22 bacteria, and so it changed those numbers somewhat,  
23 but in this case the original studies here were  
24 based on the 1998 ASAE.

25 Q Okay. So that I understand what you're

04:36PM

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1 Let's look at Exhibit 8 and ask you if this ASAE  
2 February '03 standard is what you believe was the  
3 source material for the Canadian River TMDL?

4 A Yes.

5 Q So let me ask you this: What was the source 04:39PM  
6 material for calculating the fecal coliform  
7 production levels in Exhibit 46 that I just handed  
8 to you?

9 A That was the 1998. At least part of it was  
10 from 1998 ASAE. 04:39PM

11 Q And did you go and obtain the materials from  
12 the ASAE schedules or did Raleigh Jobes do that for  
13 you?

14 A I think he did that.

15 Q Are you familiar with a TMDL of bacteria 04:39PM  
16 conducted in Frederick and Clark County, Virginia  
17 published in 2004?

18 A What was the name of it? Was it Frederick and  
19 Clark County TMDL?

20 Q It was the Abrams Creeks and I don't know how 04:40PM  
21 to pronounce it, O-P-E-Q-U-O-N.

22 A I believe I am, yes.

23 Q Did you rely on or use any of the materials  
24 from that TMDL?

25 A I can't remember if I did or not, but I do 04:40PM

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1 poultry litter after you put on a layer or two, and  
2 you will actually have some fermentation going on  
3 there.

4 Q And you're talking about fermentation on the  
5 floor of the house or in a pile that's been stored?

04:52PM

6 A Both.

7 Q And what have you done to clinically establish  
8 fermentation in poultry litter sitting in the barn  
9 floor?

10 A I haven't.

04:52PM

11 Q And what -- I don't see any studies in your  
12 materials and that doesn't mean they're not there,  
13 but can you point me to any study that uses the term  
14 fermentation?

15 A No, not that uses the term fermentation, but  
16 that's a term I picked up from a personal  
17 communication with a researcher at the University of  
18 Georgia, and she was telling me about the analysis  
19 of bacteria in poultry litter versus fresh droppings  
20 and pointed out to me that as the poultry litter  
21 accumulates in the house, you actually have heating  
22 that goes on, and part of that heating is what  
23 raises the temperature within the poultry house;  
24 therefore, you have to control the environment, and  
25 that's part of the drying process as well, and

04:52PM

04:53PM

04:53PM

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1 A Yes.

2 Q And my point, though, is, that term,  
3 fermentation, is not used in those manuals, are  
4 they?

5 A No, no.

04:56PM

6 Q Have you undertaken any study or reviewed any  
7 studies that quantify the amount of die-off rate  
8 that occurs in a four to five-inch depth of poultry  
9 litter while chickens are in the houses on that  
10 litter?

04:57PM

11 A I haven't performed any studies, no.

12 Q Is the -- do you agree that the killing of the  
13 microorganisms by composting is dependent upon the  
14 depth of the stacked pile?

15 A Well, yes, it can be, but it's also dependent  
16 upon drying.

04:57PM

17 Q If we leave the poultry stacked at four to  
18 five inches in the house, are you telling me that at  
19 some point eventually in the field it's going to dry  
20 out to where the microorganisms all will be dead in  
21 it?

04:57PM

22 A Let me remind you that composting is dependent  
23 upon a moisture percentage. If you don't have a  
24 minimum moisture percentage, you won't have a good  
25 composting rate. The whole point here is that

04:58PM

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1 of the 111, basically 55,000? Tell me what occurred  
2 in order for that to happen.

3 A Oh, under poultry?

4 Q Yes, sir.

5 A Oh. That -- that referred to the poultry loss  
6 of bacteria due to drying.

05:12PM

7 Q How did you arrive at a 50 percent reduction  
8 in coliform counts for drying that you say occurs?

9 A That was from a couple of articles that were  
10 read, and I think Dr. Jobs actually provided that  
11 information.

05:12PM

12 Q Are those articles in your considered  
13 materials?

14 A I don't think they're in there, but I can get  
15 them in there.

05:13PM

16 Q I don't recall seeing anything that would say  
17 that. So I need to see those articles.

18 A Okay.

19 Q And explain to me, is this the drying that  
20 occurs when the poultry litter is sitting on the  
21 barn floor when the chickens are in there?

05:13PM

22 A Yes.

23 Q And so is the number at the top table where  
24 it's 111,000 fecal coliform, is that an excreted  
25 coliform count?

05:13PM

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1 going to be 25, thereabouts.

2 Q Is part of that drying effect as a result of  
3 having the bedding material there?

4 A That's part of it. The major part of it is  
5 surface drying with air movement.

05:15PM

6 Q Okay, and, again, what's your authority that  
7 in fact there is such a reduction in what you say a  
8 rapid period of time; what do you rely on for that  
9 statement; is there a study; is there anything that  
10 you rely on from the study or reported paper?

05:15PM

11 A I can look in any of these studies or these  
12 guidance documents, and they will tell me that  
13 litter harvested ranges from 20 to 30 percent.

14 Q And would you agree with me that when litter  
15 is harvested, it's been in there for a period of a  
16 year, sometimes a little longer?

05:15PM

17 A But poultry crapped on it yesterday.

18 Q Okay, and that's your point?

19 A That's my point.

20 Q Okay, and you're going to get me the articles  
21 to show the die-off rate is 50 percent?

05:15PM

22 A I'll get that.

23 Q There was another article you cited for this  
24 fermentation process by Kelley, and it's Exhibit No.

25 36. Can you tell me where in that article it uses

05:16PM

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1 the term fermentation?

2 A He doesn't. As I said, and I'll repeat that,  
3 it was not a good choice of terms on my part.

4 Q If you'll look at Page 281 of the Kelly sample  
5 or -- not sample but paper.

05:17PM

6 A Okay.

7 Q It says in the first full paragraph, the first  
8 sentence, litter subsamples were collected initially  
9 at time intervals of two, four, eight and  
10 sixteen-week storage using sterile equipment. Do  
11 you see that?

05:17PM

12 A Oh, second, okay, yes.

13 Q Okay. So now we know what they're collecting  
14 and what time period. Dropping down to the last  
15 full sentence of that same column where it starts  
16 after the Footnote 15 is recited there, it says  
17 litter samples of approximately 5 grams were dried  
18 in a vacuum drying oven at 105 degrees centigrade  
19 for approximately four hours to determine percentage  
20 moisture content so that microbial numbers were  
21 expressed on a dry weight basis. Can you tell us  
22 what they did there?

05:17PM

05:17PM

23 A Well, they cultured the bacteria originally,  
24 but then they wanted to know what -- how many  
25 bacteria they had on a dry-unit basis.

05:18PM

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1 A No.

2 Q So at the time that it's reported, it may very  
3 well be that the next day or next week or next month  
4 it then is applied, but it would be in the same  
5 year; would you agree with that?

05:38PM

6 A It could be.

7 Q Okay.

8 A But the point, sir, in this is that I didn't  
9 subtract carryover, nor did I subtract stored from  
10 anything. The only thing I subtracted is -- to look  
11 at is the known exported.

05:38PM

12 Q Okay, and let's talk about that. You used  
13 2002 production for the amount of waste that's being  
14 produced; correct?

15 A That was the reference I had available to me.

05:39PM

16 Q Okay, all right. Well, we'll talk about that  
17 later, but why would you deduct the amount that's  
18 being hauled out in 2007 when it was never hauled  
19 out in 2002?

20 A Well, it was beginning to be hauled out before  
21 2007.

05:39PM

22 Q Well, did you take a look to see how much was  
23 produced in 2002 to compare how much was produced in  
24 2007?

25 A No.

05:39PM

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1 Q So if more birds are being grown in 2007 than  
2 are grown in 2002, we agree that the waste  
3 production is going to be greater also, don't we?

4 A That could be.

5 Q And you've done nothing to account for that in 05:39PM  
6 your calculations, have you?

7 A Well, I haven't, but if that's an issue for  
8 you, we'll go to what is produced, 295,000 tons.

9 Q So your -- well, that's your opinion about  
10 what's produced; correct? 05:39PM

11 A Well, isn't it my opinion we're trying to get?

12 Q Well, and I'm asking you, and I'm going to ask  
13 you how you base that opinion later.

14 A Yeah.

15 Q But that's your opinion? 05:39PM

16 A That's my opinion.

17 Q And you know that there are other opinions  
18 that are much greater than that?

19 A I list them here.

20 Q Okay. Well, you don't list them all, do you? 05:40PM

21 A I list the ones that were available to me in  
22 this litigation that I've seen produced, information  
23 produced.

24 Q Well, didn't Dr. Fisher testify to greater  
25 amounts than what you've listed here? 05:40PM

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1 counts, did you take into consideration the  
2 decomposing bodies of birds that may end up in  
3 burial pits?

4 MR. GRAVES: Object to form.

5 A No. 05:48PM

6 Q Did you look at or consider the contribution  
7 of nutrients contributed from the decomposing bodies  
8 of poultry that may have been buried in the IRW?

9 MR. GRAVES: Same objection.

10 A I did not. 05:48PM

11 Q Did you take into consideration the nutrient  
12 contributions of the birds in the compost when it's  
13 land applied?

14 A I did not.

15 MR. BOND: Object to form. 05:48PM

16 MR. GARREN: I'll finish with this exhibit  
17 and we'll stop. How's that?

18 MR. GRAVES: That's fine.

19 MR. ELROD: Thanks.

20 Q I've handed you Exhibit 43, Dr. Clay. 05:50PM

21 A Yes.

22 Q And that's the Exhibit F, I believe, from your  
23 appendices.

24 A Yes.

25 Q Who prepared the calculations that are shown 05:50PM

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1 in Exhibit F or Appendix F?

2 A Dr. Jobes.

3 Q And what was your contribution to the creation  
4 of Exhibit F, which is that first page after the  
5 title page?

05:50PM

6 A My contribution was the information about time  
7 spent grazing, loafing, et cetera, and the basin  
8 management study.

9 Q Look in the upper left-hand corner. It says  
10 in parenthesis in the first box there, it appears  
11 that the Alexander report is missing other cattle,  
12 referring to a category. Is that a statement you  
13 made or Jobes?

05:51PM

14 A I did make that statement.

15 Q Okay, and we're referring to the 1997 data or  
16 the 2002 data when you said that?

05:51PM

17 A 2002 data.

18 Q Okay. The far right column, second block down  
19 where it talks about estimated '97 values on  
20 percentage for the OCC values, do you see that?

05:52PM

21 A Yes.

22 Q And there's a number in there for 53,200?

23 A Yes.

24 Q Is that the number of cattles -- number of  
25 cattle data that was described in the OCC document

05:52PM

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1 in your materials?

2 A In subwatershed in Oklahoma.

3 Q All right. So that's just the total number of  
4 cattles that are there; correct?

5 A That's the total number they identified. 05:52PM

6 Q Of those cattle, how many did you assume had  
7 direct access to streams?

8 A All of them.

9 Q And why did you do that?

10 A Because I believe that's what they were 05:52PM  
11 presenting.

12 Q Well, in fact, they never made that statement  
13 in that report, did they?

14 A That was my interpretation.

15 Q Okay. What they actually showed in those 05:52PM  
16 tables were number of cattle in a subwatershed;  
17 correct?

18 A They counted them, yes.

19 Q All right, and they made no statement that  
20 each of those cattle had direct access, did they, in 05:52PM  
21 that study?

22 A They made the statement that cattle generally  
23 have access to streams, and we saw one of those  
24 statements earlier, but we don't know exactly how  
25 many. 05:53PM

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1 Q Okay, but so -- and I believe that statement  
2 was not -- was either some or most; correct?

3 A Yes, and they also made a statement in there  
4 that the cattle are such a significant contributor,  
5 they act essentially as point source.

05:53PM

6 Q But that's for the ones who have directly  
7 deposited; correct?

8 A They were making a statement about cattle,  
9 like they did a bunch of categorical things.

10 Q Okay. Point of it is, sir, some or most would  
11 not necessarily mean 100 percent normally, would it?

05:53PM

12 A Probably not 100 percent.

13 Q Okay. You said that in the footnotes down  
14 below that cattle spend on average 13.7 hours per  
15 day in loafing areas, and then below that you said  
16 assume the same for dairy cattle. Is that what  
17 you're assuming?

05:54PM

18 A Yes.

19 Q And on what basis did you have to assume that  
20 dairy cattle would spend the same amount of time  
21 loafing per day?

05:54PM

22 A Dairy cattle actually have more time to loaf.

23 Q And didn't you, though, also say that that  
24 loafing occurs in riparian areas?

25 A They're in the same setting or similar setting

05:54PM

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IN THE UNITED STATES DISTRICT COURT FOR THE  
NORTHERN DISTRICT OF OKLAHOMA

W. A. DREW EDMONDSON, in his )  
capacity as ATTORNEY GENERAL )  
OF THE STATE OF OKLAHOMA and )  
OKLAHOMA SECRETARY OF THE )  
ENVIRONMENT C. MILES TOLBERT, )  
in his capacity as the )  
TRUSTEE FOR NATURAL RESOURCES )  
FOR THE STATE OF OKLAHOMA, )  
Plaintiff, )  
vs. ) 4:05-CV-00329-TCK-SAJ  
TYSON FOODS, INC., et al, )  
Defendants. )

-----  
VOLUME II OF THE VIDEOTAPED  
DEPOSITION OF BILLY CLAY, PhD, produced as a  
witness on behalf of the Plaintiff in the above  
styled and numbered cause, taken on the 25th day of  
March, 2009, in the City of Tulsa, County of Tulsa,  
State of Oklahoma, before me, Lisa A. Steinmeyer, a  
Certified Shorthand Reporter, duly certified under  
and by virtue of the laws of the State of Oklahoma.

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1 A I did not.

2 MR. GARREN: Did we introduce No. 5  
3 yesterday?

4 COURT REPORTER: We did.

5 Q Let's try and find that document, if we could, 08:44AM  
6 Dr. Clay.

7 A Just a minute and I'll walk through them. Is  
8 this the one you're talking about?

9 Q Yes, sir. I was trying to get them  
10 straightened out. I believe we talked a little bit 08:45AM  
11 about this yesterday, but you used this in part as  
12 one of your references, did you not?

13 A I did.

14 Q Let's go to page Bates numbered 78 and look at  
15 the table there and the table that precedes it on 08:45AM  
16 Page 77 and start with 78. Table 1-6 shows typical  
17 litter production as removed from production  
18 analysis. Did you use these numbers in making your  
19 calculations?

20 A Some of these numbers, yes. 08:45AM

21 Q When I say you, let me clarify that. Did you  
22 specifically take these numbers and give them to Mr.  
23 Jobes or did you rely on Mr. Jobes to go and get the  
24 numbers, make the calculations for you?

25 A Some of both. Mr. Jobes and I worked together 08:46AM

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1 on that.

2 Q Okay.

3 A It's Dr. Jobes.

4 Q Dr. Jobes, thank you. Let's just talk about

5 him real quick while we're there. Is he employed at 08:46AM

6 this time?

7 A He's an emeritus faculty at Oklahoma State

8 University.

9 Q How long have -- is this the first time you

10 worked with him in preparing a paper or a report as 08:46AM

11 you've done here?

12 A Yes, it is.

13 Q What's his education?

14 A He has a PhD in agricultural economics.

15 Q Who pays him for the work he's done? 08:46AM

16 A Well, the -- in this case the defendants.

17 Q Is it Ozark International that's paying him?

18 A Yes.

19 Q You're not paying him from your expenses?

20 A No. 08:47AM

21 Q All right. How was it you came to use Dr.

22 Jobes?

23 A Well, I've known Dr. Jobes for a while. We

24 live in the same section of land for that matter,

25 and I know he's an agricultural economist, and I 08:47AM

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1 know he's done many of these kinds of things for  
2 Oklahoma State University. So I sought him out and  
3 asked him if he would be interested.

4 Q All right. Have you worked with him on any  
5 other projects besides the one to prepare your 08:47AM  
6 expert report?

7 A Yes.

8 Q What kind of projects have you worked with him  
9 on?

10 A We worked on a dairy project. It was a 08:47AM  
11 essentially a dairy economics project, but it had to  
12 do with disease status of the animals as well, and I  
13 worked on the disease status and he worked on the  
14 economics.

15 Q Did he write any of the report that's 08:47AM  
16 presented under your name in this expert report?

17 A No.

18 Q Did he prepare most of the appendices or all  
19 of the appendices that are attached to your report?

20 A Yes. 08:48AM

21 Q Is the Poultry Waste Management Handbook an  
22 authority relied on by the scientific community for  
23 purposes of determining waste characteristics with  
24 poultry?

25 A It's one of them. 08:48AM

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1 Q Okay, all right. I'm with you now. Thanks.

2 What was the average weight of the broilers that you  
3 utilized for calculations?

4 A 2.25 pounds.

5 Q And is that -- tell us why you used that 08:53AM  
6 weight.

7 A Well, they start off at ounces and wind up at  
8 5 pounds, 5.2 pounds.

9 Q So the mature weight you used is 5.2 pounds?

10 A I think that was the -- 5.13 I believe. I'd 08:53AM  
11 have to go back to look to be exact, but it's my  
12 recollection.

13 Q And so you just didn't take the average or  
14 median to get to the 2.25?

15 A No. We used that from a standard, and Dr. 08:53AM  
16 Jobes had that standard that he uses routinely.

17 Q Is that standard in your considered materials?

18 A I think it is. I think it's stated in there.

19 Q Can you tell me what I would look for to find  
20 that standard as I don't believe I've ever seen it? 08:54AM

21 A I cannot remember, but we believe that from  
22 experience, that the 2.25 is the average number that  
23 should be used to calculate the total.

24 Q I understand you believe that, but I'm asking  
25 for your authority that you rely on other than just 08:54AM

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1 your belief.

2 A Dr. Jobes.

3 Q All right, and did Dr. Jobes provide you a  
4 document or materials that were considered by you  
5 and as part of your considered material produced to  
6 the State?

08:54AM

7 A Well, I don't remember. I noticed your  
8 consultants used a similar number in making their  
9 calculations.

10 Q Similar but not the same?

08:55AM

11 A Not exactly.

12 Q Did Dr. Jobes tell you where he got that  
13 number?

14 A He probably did.

15 Q And you don't have a recollection today?

08:55AM

16 A No.

17 Q Did you do anything to confirm or validate the  
18 5.13 pounds for a broiler produced in the IRW?

19 A I think I did produce a document showing that.

20 Q What was that document?

08:55AM

21 A It showed -- it was a USDA quoted document  
22 that the Delmarva association of poultry folks  
23 published, and they did the national number. In  
24 2002 I believe it was 5.13 pounds.

25 Q Did you do anything to document the size of

08:56AM

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1 show on those birds?

2 A This one is eight weeks, and it shows 6 and a  
3 half.

4 Q And the second page?

5 A Another eight weeks at 7. 08:59AM

6 Q And the next page shows how many pounds?

7 A Nine weeks at 8.

8 Q And the next one?

9 A Nine weeks at 8.

10 Q And the next one at seven weeks? 08:59AM

11 A Yes, seven weeks at 5.

12 Q And that's a 1999 settlement sheet. Do you  
13 see that at the top?

14 A I do.

15 Q The next one, we have small straight runs. Do 09:00AM  
16 you know how many small birds they grow?

17 MR. BOND: Object to the form.

18 A Where are we here?

19 Q I'm looking at the very next page.

20 A Where it says six weeks? 09:00AM

21 Q Yes, sir.

22 A 4 pounds.

23 Q Okay. Do you know how many -- as opposed to  
24 the larger broilers we saw on the first page, did  
25 you determine how many small broilers are raised? 09:00AM

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1 there.

2 Q Let's -- let's go back just a second. All

3 right? For your work in this case you did not

4 access this data in order to calculate the type and

5 size of birds being grown, did you?

09:01AM

6 MR. BOND: Object to the form. What data?

7 A I will have to ask you to restate that because

8 I want to understand.

9 Q The actual information prepared by the

10 integrators showing the size and type of birds grown

09:01AM

11 in the IRW, you did not access that data in order to

12 make your calculations for the size or weight of

13 birds; correct?

14 A I told you in the very beginning that the

15 numbers I used, and you're holding it up there in

09:02AM

16 your left hand.

17 Q Just answer my question. Did you access the

18 data that the integrators had?

19 A I did not.

20 Q All right. Now, in front of the first colored

09:02AM

21 page is there a page that's called U.S. broiler

22 chicken performance?

23 A First colored page, okay. Yes.

24 Q Now, is that the document that has your Clay

25 1050 page number on it that you referenced earlier

09:02AM

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1 that you said was your source for the size of birds?

2 A Yes.

3 Q All right. That doesn't say 5.13 on it,  
4 though, does it?

5 A Well, that was just from recall.

09:02AM

6 Q Now, in order to get to the number of birds  
7 that you calculated are in the IRW, you relied on  
8 the census through the ZIP Code dataset; is that  
9 correct?

10 A Yes.

09:03AM

11 Q And you downloaded that dataset or did Mr. --  
12 Dr. Jobes download that dataset?

13 A Dr. Jobes did.

14 Q All right, and he made the calculations from  
15 that -- let me ask it this way: Who made the  
16 calculations to assign what percentage of each ZIP  
17 Code would be in the IRW?

09:03AM

18 A He did that.

19 Q What assumptions did he make in the  
20 allocation, if you will, of the birds within the ZIP  
21 Code?

09:03AM

22 A Well, they're reported in the ZIP Code.

23 Q I'm sorry. I didn't make my question very  
24 clear. In talking about those that lie in and  
25 outside of the boundaries of the IRW --

09:04AM

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1 A Oh.

2 Q -- what assumptions and allocations did he  
3 make to calculate the birds?

4 A When we ordered the ZIP Code data, they sent  
5 it in hard copy form, as well as by E-mail. They  
6 told us what percentage of the ZIP Code was in the  
7 county of each of the ZIP Codes that were involved.

09:04AM

8 We then did an overlay over the watershed and  
9 determined what percentage of the ZIP Code was in

10 the watershed.

09:04AM

11 Q And how was that overlay done?

12 A It was done with a computer.

13 Q And who did that?

14 A He did that.

15 Q And do you know what he used in order to make  
16 the overlay?

09:04AM

17 A I don't remember.

18 Q Did you see him do the work?

19 A I saw it after he had it in place.

20 Q Do you agree that the census provides some  
21 confidentiality in the reporting of data that it  
22 collects for the farmers?

09:04AM

23 A Yes, I do.

24 Q Let me hand you what is marked as Exhibit No.

25 9. Have you seen that before on the Ag Census

09:05AM

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1 website?

2 A Yes.

3 Q And it has a notation there where it shows an  
4 asterisk under the particular ZIP Code that was  
5 pulled for this example.

09:05AM

6 A Uh-huh, yes.

7 Q Read to the court and jury what the footnote  
8 describes the purpose of the asterisk in the dataset  
9 to be.

10 A It says, data withheld for categories with one  
11 to four farms. Farm counts in these ZIP Codes are  
12 included in the state total category.

09:06AM

13 Q All right.

14 A And when they report it, they use a D instead  
15 of an asterisk.

09:06AM

16 Q And did -- what adjustment, if any, did Dr.  
17 Jobes make in the calculations for data that was not  
18 reported?

19 A He didn't include them if they didn't report  
20 it.

09:06AM

21 Q Okay. Did Dr. Jobes do any calculation for  
22 margin of error estimates for the work he performed  
23 in making these calculations?

24 A Restate that again, sir.

25 Q Did you or Dr. Jobes make any calculation to

09:06AM

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1 determine a margin of error for the estimates made  
2 from the calculations for the number of poultry  
3 being produced?

4 A No.

5 Q Let me hand you what's Exhibit 38 and ask you 09:07AM  
6 if you recall seeing that document.

7 A Yes. It looks familiar.

8 Q That's, in fact, Table BA from your  
9 appendices, is it not?

10 A Yes. 09:07AM

11 Q All right. Do you see where circles have been  
12 entered on the lower portion of this document?

13 A Yes.

14 Q And do you see where they have circled some  
15 asterisks that appear there? 09:07AM

16 A Yes.

17 Q And do you agree with me, sir, that based on  
18 the prior exhibit, this is ZIP Codes listed that  
19 have no data based upon the fact there's one to four  
20 farms in that ZIP Code? 09:08AM

21 A I am.

22 Q Is that your understanding of why that's  
23 there?

24 A It is.

25 Q All right, and you're saying that Dr. Jobes 09:08AM

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1 did not make any adjustment for those; correct?

2 A No. We were aware that there was an under  
3 estimate on turkeys.

4 Q All right, and did you contact the integrator  
5 that produces turkeys in this case to determine how  
6 many turkeys they produce in the IRW?

09:08AM

7 A We didn't.

8 Q All right. Looking at -- I believe there's a  
9 ZIP Code -- at the very last page the ZIP Code in  
10 Delaware County is 74964. It would be the very last  
11 page, almost to the middle of the --

09:08AM

12 A Yes.

13 Q Do you see where the two circles are shown  
14 there, one for a broiler and one for turkeys sold?

15 A I do, I do.

09:08AM

16 Q So that would indicate no disclosure or no  
17 data provided for broilers or turkeys in that ZIP  
18 Code; correct?

19 A That's correct, because there was just I think  
20 two. I think there were two.

09:09AM

21 Q Did -- what -- you say you think there were  
22 two. Two what?

23 A Two farms.

24 Q And did you do anything to validate or confirm  
25 what you thought was true or not true?

09:09AM

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1 A No. We knew that there would be some under  
2 estimate in a few places, but we were looking at a  
3 gross estimate to begin with.

4 Q If you could find Exhibit 17 and we'll just  
5 look at that real quick and leave that handy I  
6 guess.

09:09AM

7 A 17?

8 Q Yes, sir. That's going to be the discovery  
9 materials showing the bird numbers with the summary  
10 page on the front.

09:09AM

11 A I hope I didn't go past it again.

12 Q It's a rather thick one.

13 A Okay. I see it.

14 Q Look under the column of 2002, and can you  
15 tell me which integrator produces turkeys in the  
16 watershed?

09:10AM

17 A Well, Cargill produces some turkeys.

18 Q Okay, and what is the number of birds produced  
19 in 2002 by Cargill?

20 A They say 2.8 million.

09:10AM

21 Q And do you recall how many birds, turkeys you  
22 used in your calculations for turkeys being  
23 produced?

24 A Yes.

25 Q What was it?

09:10AM

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1 A 669,000.

2 Q Okay. That's about 2.2 dollar -- 2 million  
3 birds -- 2.2 millions birds short of what they say;  
4 correct?

5 A Correct.

09:10AM

6 Q Let's look at Exhibit 40, a 2002 Ag Census  
7 form. Have you seen these documents before or this  
8 particular document?

9 A I've looked at it, yes.

10 Q Okay. Unfortunately, we don't have page  
11 numbers. I'll have to refer you to Section 9, which  
12 deals with hogs and pigs.

09:11AM

13 A Section -- okay.

14 Q Well, actually let's go to Section 10. We'll  
15 start with the cattle. It's the next page over.

09:11AM

16 Now, can you tell the court what this form is used  
17 for?

18 A It's a census form for individual producers to  
19 fill out.

20 Q And is this the form that ends up in the Ag  
21 Census data that you used in preparing your  
22 calculations in this case?

09:12AM

23 A Correct.

24 Q Under 1A of this form, it talks about beef  
25 cows.

09:12AM

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1 A Yes.

2 Q And it says include beef heifers that had  
3 calved; correct?

4 A Which in essence is cows.

5 Q Okay, and then under 1C it talks about other 09:12AM  
6 cattle, which are heifers, steers, calves and bulls  
7 combined; isn't that true?

8 A Yes.

9 Q All right. Doesn't that cover all of the  
10 cattle that would exist in a given period for 09:12AM  
11 purposes of a census?

12 A That exist, yes.

13 Q All right, and can you tell the court why it  
14 is then you added a bull in your calculations and  
15 additional heifer replacements in your use of the 09:12AM  
16 1.3 animal unit calculation?

17 A To produce the manure and the total amount of  
18 material that's within the manure.

19 Q You didn't rely then on just the census, did  
20 you? 09:13AM

21 A I told you from the beginning I relied on the  
22 census, plus the data that's available to support  
23 that.

24 Q Wouldn't you agree with me, sir, the  
25 definitions for the type of beef cow and other 09:13AM

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1 cattles that are listed here would include heifers  
2 whether they're replacements or not?

3 A Yes, but if you'll look closely at our  
4 calculations, what we did in determining or using  
5 those -- that 1.3, we didn't put the calves in 09:13AM  
6 there. We put the heifers in there but no calves  
7 were included. Now, what you have in other cattle,  
8 although it's not spelled out here, is that there  
9 are a lot of cattle that are bought and sold in the  
10 watershed. There are also a lot of cattle -- calves 09:13AM  
11 that are carried over from one year to the next to  
12 grow them.

13 Q And aren't those all intended to be picked up  
14 in the census by the definition of the beef cows and  
15 other cattles? 09:14AM

16 A And that's what the producer does. They just  
17 count all of those cattle, add them up and put them  
18 in there.

19 Q All right. So you would have them all in  
20 those counts, would you not? 09:14AM

21 A That's right. They'll all be in there in  
22 other cattle.

23 Q And notwithstanding that, you still added more  
24 to it in order to do your numbers, didn't you?

25 A Did not add more to it. 09:14AM

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1 Q Well, you used a 1.3 versus a 1, didn't you.

2 Doesn't that additional .3 include part of a bull,

3 additional heifers that are being --

4 A 1-25th of a bull.

5 Q Okay, and it includes replacement heifers,

09:14AM

6 doesn't it?

7 A Heifers but no calves.

8 Q All right, but all the heifers are supposed to

9 be accounted for by this document; don't you agree?

10 A As far as the production of manure and/or its

09:14AM

11 constituents, the difference between the heifers

12 that would be included in the 1.3 and the calves is

13 a wash because the calves, there are about 81,000 of

14 them or could be 81,000 of them, which were not

15 accounted when we were doing that, and the heifers

09:14AM

16 are two heifers per eight cows.

17 Q Where did you get your calf number that you

18 just referred to?

19 A Calf crop.

20 Q And where did -- calf crop?

09:15AM

21 A About 80 percent calf crop.

22 Q And that's an estimate on your part; correct?

23 A That's an estimate.

24 Q It's not coming from the Ag Census?

25 A No.

09:15AM

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1 Q Didn't come from any actual sales in the  
2 watershed, did it?

3 A It came from some animal science people that I  
4 talked to in the University of Arkansas and also in  
5 the Oklahoma and --

09:15AM

6 Q Who are the animal science people?

7 A The animal science guy was the department head  
8 over there, and I'm trying to remember his name. It  
9 escapes me right now, but I talked to him about  
10 that.

09:15AM

11 Q And did he have a data source to rely on or do  
12 you know?

13 A I'm confident he has a data source. That's  
14 his business.

15 Q You're confident, but do you know, sir, that  
16 he referred to that as --

09:15AM

17 A I don't have it in my hands, and I did not use  
18 it. I used his word for it.

19 Q All right. He didn't produce any document to  
20 your --

09:15AM

21 A No, he did not.

22 Q You have nothing to verify the conversation or  
23 the numbers that he gave you; correct?

24 A I'm telling you what happened.

25 Q Turn back one page in the same exhibit. Would

09:16AM

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1 you agree with me that the definition of replacement  
2 guilt would be included in the inventory request  
3 under 1A and 1B of this form?

4 A There could be some replacement gilts in  
5 there, yes.

09:16AM

6 Q Dr. Clay, let me hand you Exhibit No. 50, sir,  
7 and represent to you this is an aerial that's taken  
8 in the spring of 2005, and it's overlaid with a ZIP  
9 Code showing the broken orange and red line for ZIP  
10 Code 74964, the one we referenced earlier.

09:17AM

11 A Yes.

12 Q You thought there were two farms in there that  
13 were not located under the Ag Census; is that  
14 correct?

15 A I believe that's right, yeah. I can't  
16 remember.

09:17AM

17 Q All right. Do you see the red circles that  
18 have names by them?

19 A Yes.

20 Q And in particular, do you see the name Steve  
21 Butler?

09:18AM

22 A I do.

23 Q You see it three times, do you not?

24 A Yes.

25 Q And do you know how many birds he was

09:18AM



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1 producing in those barns during the period of time?

2 A No.

3 Q Do you know how many birds were produced prior  
4 to Mr. Butler operating these farms in 2002?

5 A No. 09:18AM

6 Q Look at the next page of this exhibit, and  
7 I'll represent to you this is a public document kept  
8 by the Oklahoma Department of Agriculture under the  
9 Poultry Registration Act that requires number of  
10 birds/house for the year. Have you ever seen this 09:18AM  
11 form before?

12 A No.

13 Q Do you see where it says grand total  
14 birds/house for this year on the first page of OKDA  
15 4929? 09:18AM

16 A Yes.

17 Q And what is the number?

18 A The number is 4 million.

19 Q And that shows this to be birds produced --  
20 I'm trying -- see the upper left-hand corner, the 09:18AM  
21 name Steve Butler, Green Country Farms, 11, 12, 13  
22 and 14?

23 A I see that.

24 Q All right. Go to the next page. Do you see  
25 the Steve Butler Farms 15 and 16 on this page? 09:19AM

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1 A Yes.

2 Q And do you see how many birds were produced in  
3 that year in those barns?

4 A 2 million.

5 Q 2.2 million. Would you agree with me, sir, 09:19AM  
6 that by failing to verify your data from your Ag  
7 Census, in this one ZIP Code alone, which is not on  
8 a border, you've missed by this grower's production  
9 over 6 million birds alone?

10 A If I missed them, your consultants also missed 09:19AM  
11 them because you got about the same number of total  
12 birds as I did.

13 Q That didn't answer my question. Do you agree  
14 with me, sir, that you didn't verify your data and  
15 that you missed easily 6 million birds produced by 09:19AM  
16 Mr. Butler?

17 A I may have missed them, yes.

18 Q All right, and there are other farms located  
19 here. Can you look at this aerial and see that  
20 there are other what appear to be poultry barn 09:19AM  
21 structures located within the circles?

22 A I saw those.

23 Q All right. Look at 17 one more time, and the  
24 total birds shown for 2002 on Exhibit 17 is how  
25 much? 09:20AM

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1 no calves included.

2 Q How do you exclude the calves when they're  
3 part of a number that has a grouping of various beef  
4 animals in one number?

5 A We excluded the calves because the calf crop 09:27AM  
6 is based and the census is based on January, and  
7 January is after the producer has sold the bulk of  
8 their calf crop. They sell them in the fall, and  
9 they're born in the early spring, late winter to  
10 early spring, and they keep them on the property 09:27AM  
11 about eight months and then they sell them, and  
12 that's the way they make their money.

13 Q And so your testimony then is that based upon  
14 that process, these calves are never counted in the  
15 Ag Census? 09:27AM

16 A Those calves would not be counted in the Ag  
17 Census, the ones that are sold. Now, if you go to  
18 cattle sold, they may appear there, but we didn't  
19 use that number.

20 Q Okay, all right. So the census reflects them 09:27AM  
21 perhaps under a different category is what you're  
22 saying?

23 A Correct.

24 Q And you ignored that category?

25 A We weren't using it in this case because we 09:28AM

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1 wanted to include the heifers as a unit as a part of  
2 the cow.

3 Q And why wouldn't you just go ahead and pick up  
4 the calves from the calves sold?

5 A We could have done it that way. We didn't 09:28AM  
6 choose to do it that way.

7 Q Did you make that calculation?

8 A I don't believe we did.

9 Q So you don't know whether it's a greater or  
10 lesser amount if you had done it that way, do you? 09:28AM

11 A Well, you take 800,000 calves versus a  
12 fraction of number of heifers. You know, it's a  
13 pretty good trade-off.

14 Q You didn't do the calculation to determine  
15 what their resale would be? 09:28AM

16 A Oh, I think we did it on just a hand rough  
17 calculation. Dr. Jobes did.

18 Q Looking at the -- the line item below this one  
19 where it says replacement heifers, six months at 600  
20 pounds? 09:28AM

21 A Yes, yes, yes.

22 Q Okay. Is that a weaned weight?

23 A Yes, approximately.

24 Q Okay. What is the type of breed of cattle you  
25 are using to calculate these weights? 09:29AM

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1 A These are mixed breeds.

2 Q And those are?

3 A Well, there are multiple breeds in the

4 watershed, both Arkansas and Oklahoma. The

5 preferred type of cattle is cross bred cattle 09:29AM

6 because of the heterosis that's involved there,

7 meaning hybrid vigor that's involved there. So

8 you're going to have a lot of English breed base

9 cattle that are also crossed on to Continental

10 cattle. 09:29AM

11 Q Looking at I think it's Table AA, it shows

12 here that you've used inventory numbers for the

13 animals on this page. Tell us why you used

14 inventory numbers when many or a lot of those are

15 sold basically in a six-month period. 09:30AM

16 A Exactly where are you now?

17 Q I'm on Table AA where you're listing at the

18 top beef cow down through horses and ponies.

19 A Oh, okay. I'm sorry.

20 Q And you're using inventory number; correct? 09:31AM

21 A Depending on the animal and the focus, yes.

22 Q And are not some of those sold during the

23 year, too?

24 A Yeah, some could be sold during the year.

25 Q Did you make any calculation to reflect the 09:31AM

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1 sale of some of those?

2 A I don't think we did, but there -- there's not  
3 very many sold on a relative basis because they're  
4 trying to maintain those -- those base herds that's  
5 involved. In other words, when you replace the  
6 animal, you replace it in the case of cattle with  
7 the heifers.

09:31AM

8 Q Look quickly at I guess C1, the large -- and  
9 under the heading where you talk about the broilers,  
10 you show that you use the 2.25 for the weight;  
11 correct?

09:32AM

12 A Yes.

13 Q And five turns at 49 days?

14 A Yes.

15 Q Why did you use five turns at 49 days?

09:32AM

16 A We saw that used routinely in State documents.

17 Q What State documents did you look at that told  
18 you that?

19 A Well, the basin management document was one of  
20 them.

09:32AM

21 Q Anything else?

22 A Well, there were several of them. I just  
23 can't remember all of them.

24 Q Okay. Have you heard that it's not uncommon  
25 to turn flocks as many as six times?

09:32AM

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1 A I have heard, yes, that it could be five or  
2 six.

3 Q Why didn't you use half of that, five and a  
4 half?

5 A We could have. It would have produced more 09:33AM  
6 manure. Would have made a bigger number, yeah,  
7 you're right, but as I said earlier, using the  
8 numbers that we used, we got a total poultry of over  
9 150 million, and that's what about everybody else  
10 got. 09:33AM

11 Q What was your source for your deer information  
12 on this C1, please?

13 A Deer information was based on harvest data in  
14 the counties adjusted to watershed again.

15 Q And did you get that information yourself or 09:33AM  
16 did Mr. Jobes -- Dr. Jobes?

17 A I got most of that information.

18 Q And how did you get it?

19 A By telephone.

20 Q And the ducks data source, what did you rely 09:33AM  
21 on to use there?

22 A A good portion of that was from -- also from  
23 telephone communication, although there were aerial  
24 surveys or -- there were surveys done of duck counts  
25 from the central flyaway that had been done two or 09:34AM

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1 three times. Dr. Jobes took some -- a lot of those  
2 numbers and compared them to some of the information  
3 I'd gotten by phone, and we arrived at those  
4 numbers.

5 Q Would you agree with me that those duck and 09:34AM  
6 deer information you just cited are not in your  
7 considered materials?

8 A Oh, I think they are in my considered  
9 materials.

10 Q So the flyaway information for ducks is in 09:34AM  
11 your considered materials?

12 A Yes.

13 Q All right, and your geese sources, what did  
14 you rely on for your geese source?

15 A Those same sources. 09:34AM

16 MR. GARREN: Okay. We need to stop to  
17 change the film.

18 VIDEOGRAPHER: We are now off the Record.  
19 The time is 9:35 a.m.

20 (Following a short recess at 9:35 a.m., 09:34AM  
21 proceedings continued on the Record at 9:47 a.m.)

22 VIDEOGRAPHER: We are back on the Record.  
23 The time is 9:47 a.m.

24 Q Dr. Clay, let's look -- continue to look at  
25 Table C1, and I want to just go through a few items 09:46AM

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1 to identify source materials. You have a column  
2 listed, total solids, in the left-hand side of that  
3 spreadsheet. What's the data source relied upon for  
4 the total solids listed in that column?

5 A I think it's either Chapter 4 or it's ASAE. I 09:47AM  
6 can't remember for sure on that.

7 Q It would be -- would you have mixed the source  
8 or would you have used only one?

9 A I -- I have presented both of them to Dr.  
10 Jobes, and I can't remember which one he used. 09:47AM

11 Q Do you know whether or not he used the same  
12 source throughout the spreadsheet for all the data  
13 that is input when it was available?

14 A I think he did, and -- but the source for  
15 bacteria, for example, was not in Chapter 4, but it 09:47AM  
16 was in other sources. So he would have had to  
17 acquire that from other places.

18 Q All right. So other than bacteria, it's your  
19 estimate today or belief that Chapter 4 of the  
20 agricultural waste management handbook would be the 09:48AM  
21 source of the data?

22 A I believe that's right.

23 Q All right. We need to compare two pages in  
24 this. Explain to me why the fecal coliform for beef  
25 in Table AA is not the same as shown in AE, which I 09:48AM

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1 reduced in its total volume or amount, and that's  
2 what that represents.

3 Q Is that reduction in volume shown in the Ag  
4 Waste Management Handbook when looking at manure  
5 versus litter?

09:52AM

6 A No. It's a calculated number.

7 Q And it's calculated based upon assumptions  
8 you've made; correct?

9 A Correct.

10 Q All right, and what is the basis for your  
11 assumptions to make that calculation?

09:52AM

12 A It -- again, Dr. Jobes had that data that he  
13 used routinely for that.

14 Q And he used routinely in this case; is that  
15 what you mean?

09:52AM

16 A That, and I think he's used it in other cases.

17 Q Well, is that material within your considered  
18 materials that he relied on in order to make this  
19 calculation?

20 A I don't believe I had any published document,  
21 no.

09:52AM

22 Q All right. So he just made that calculation  
23 and you accepted it?

24 A He used that as well. In other words, he did  
25 some reverse calculations using litter, et cetera,

09:52AM

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1 and arrived at those numbers to check.

2 Q And when the litter is removed, it's given an  
3 as-is designation or as-removed, and it has a  
4 basically 25 percent moisture level in it; correct?

5 A Correct.

09:53AM

6 Q All right. Why didn't you just use those  
7 numbers instead of then drying it a second time?

8 A Oh, we did. The next level you'll see that.

9 Q Well, that's my question. When it's removed  
10 and you testified in the PI hearing that when it's  
11 spread, it has a moisture content of 25 percent;  
12 correct?

09:53AM

13 A Correct.

14 Q So are you saying that drying occurs before it  
15 gets to 25 percent to get to this number or are you  
16 drying it again after it's gotten to 25?

09:53AM

17 A No, no, no, no, before, before.

18 Q So why don't you just use the as-removed  
19 litter number that's published in the Ag Waste  
20 Management Handbook?

09:53AM

21 A What we were doing was getting from gross  
22 manure dropped on the litter or came out of the back  
23 end of the bird at 75 percent moisture, allowing it  
24 to sit and be exposed to the elements.

25 Q The elements inside the barn?

09:53AM

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1 A And -- yes, and the drying process that goes  
2 on there, and also as mentioned earlier, there is  
3 some degree of decomposition that goes on there, and  
4 in that decomposition, there's nitrogen loss and  
5 there's carbon dioxide loss.

09:54AM

6 Q Aren't those things taken into consideration  
7 in the Ag Waste Management Handbook when they show  
8 the characteristics for poultry litter?

9 A Yes.

10 Q Okay. So my question to you is, why would you  
11 change those numbers for calculations in this  
12 lawsuit instead of use what they had published?

09:54AM

13 A We were just looking at it. As you will see,  
14 we didn't absolutely use those numbers anywhere in  
15 our total calculations. What we did is just lay it  
16 out and looking at it from our perspective to look  
17 at. What we looked at was we actually reduced the  
18 manure itself to its absolute dry weight and then  
19 added back the given amount of moisture, as well as  
20 the amount of -- given amount of organic material,  
21 to arrive at that calculation.

09:54AM

09:54AM

22 Q And that calculation isn't the same that's  
23 published in the Ag Waste Management Handbook, is  
24 it?

25 A That calculation isn't the same.

09:55AM

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1 Q When you took the manure and then you added  
2 back essentially the litter and the moisture  
3 content, didn't you?

4 A Yes.

5 Q That's essentially what you're doing? 09:55AM

6 A Yes.

7 Q Well, my point is, that calculation isn't the  
8 same as is published by the Ag Waste Management  
9 Handbook?

10 A It's similar. 09:55AM

11 Q But it's not the same, is it?

12 A It's not absolutely the same, but all of these  
13 are estimates, just like all of the estimates that  
14 were provided by your consultants.

15 Q Did -- did the calculation that you performed 09:55AM  
16 show that there is a greater or lesser amount of  
17 poultry manure being moved out of the house?

18 A It showed that it's -- from all of those  
19 people that have made calculations that were  
20 available to me, it showed that I'm kind of right in 09:55AM  
21 the middle of those calculations.

22 Q As compared to the Ag Waste Management  
23 Handbook, does it show -- do your calculations show  
24 that --

25 A Mine are similar. Mine numbers are similar. 09:55AM

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1 Q I haven't finished the question.

2 A Oh, I'm sorry.

3 MR. TUCKER: Remember, you have to count to  
4 two.

5 A Yes.

09:56AM

6 MR. ELROD: You need to count to three.

7 Q Do your calculations -- when you have dried  
8 the manure, added back the litter and then it's  
9 removed at that time, that number is greater than or  
10 lesser than what would be published in the Ag Waste  
11 Management Handbook?

09:56AM

12 A It's similar. I can't remember the exact  
13 comparison.

14 Q Isn't it a fact it's less, sir?

15 A It might be slightly less.

09:56AM

16 Q Do you know?

17 A I can't remember it to be frank with you, but  
18 I have several estimates of litter production, and  
19 that's what they all are. They're all estimates.

20 My estimate is different from some of the others but  
21 quite similar.

09:56AM

22 Q But you went and did some additional  
23 calculations in order to come up with your number  
24 when in fact the as-is or as-removed litter numbers  
25 are published in a waste management handbook that

09:57AM

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1 has been adopted and accepted and utilized by  
2 experts in this field for years; do you agree with  
3 that?

4 A I agree that there are -- the waste management  
5 handbook is -- what year is it -- '92. I agree that 09:57AM  
6 those numbers are there. I could also tell you that  
7 no one had the numbers to calculate the amount of  
8 litter in the Illinois River watershed. We chose a  
9 method of doing that whereby we did it based on 2002  
10 census data so that we could estimate a number of 09:57AM  
11 total poultry in the watershed and from that total  
12 poultry determine how much manure they're likely to  
13 produce and then convert that to a litter format.

14 Q And given the choice in this case when you  
15 redid these calculations from what's shown in the Ag 09:57AM  
16 Waste Management Handbook, you had a choice, didn't  
17 you, to use your calculations, which are lower than  
18 those that are published in the Ag Handbook;  
19 correct?

20 A Actually, I had a choice to take an average of 09:58AM  
21 the lowest estimate and an average of the highest  
22 estimate. That was a choice. I preferred to take  
23 the -- use the choice of my own production data.

24 Q And the production data is from your  
25 methodology of calculating ZIP Code from the Ag 09:58AM

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1 just talked about where you take simply the manure?

2 A Yes.

3 Q Dry it independently in your calculation?

4 A Correct.

5 Q Add back litter based upon an estimate of what 10:00AM  
6 you believe is in the barn; correct?

7 A Correct.

8 Q And then reduce that again by another some  
9 additional moisture content reduction; correct?

10 A Correct. 10:00AM

11 Q Now, did you validate your calculations on the  
12 total amount of litter that has been removed from  
13 the house as compared to what Sheri Herron told you  
14 is normally removed?

15 A Well, I made comparisons, yes. 10:01AM

16 Q And did you get 190 tons in your calculations  
17 when you did that?

18 A Well, I think I reported that in my report.

19 Q Do your calculations show that it's 190 tons  
20 being removed after you dried it twice? 10:01AM

21 A No. It's not a matter of 190 tons per house.  
22 This is not based on a house. This is based on  
23 total number of poultry.

24 Q And how many average poultry are in a house on  
25 a flock? 10:01AM

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1 A Well, I didn't do it that way. I just took  
2 the total poultry to make the calculations.

3 Q So you -- back to my initial question then,  
4 you didn't verify or validate your calculations  
5 against another known number like Sheri Herron, who  
6 knows how much litter is actually pulled out in  
7 tons?

10:01AM

8 A Yes, I did.

9 Q And where can you show me you did that?

10 A Just a moment. Excuse me. It will take me a  
11 moment to find it.

10:02AM

12 Q Are you referencing your report?

13 A Yes. Page 17 of the report. I show a Herron  
14 number using that 190 tons and 1,800 houses of  
15 307,700 tons, and my number was 295,114, and then I  
16 did a calculation based on litter produced from the  
17 handbook, poultry handbook, and calculated 312,000  
18 tons, and so that was a comparator way, a way of  
19 comparing.

10:02AM

20 Q So the number you have here for Herron/Clay,  
21 you're telling me that's 190 tons times 1,800  
22 houses?

10:03AM

23 A Yes.

24 Q Back again to the large spreadsheet that we're  
25 on in Exhibit 45.

10:03AM

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1 where his waste came from?

2 A I asked him if I could look at his numbers,  
3 and he said, no, I'm not going to show you my  
4 numbers.

5 Q Where is he located?

10:14AM

6 A Stilwell -- Westville, Westville.

7 Q He's in Oklahoma?

8 A Yes.

9 Q Did you ask him whether or not he's a  
10 registered certified applicator?

10:14AM

11 A I didn't.

12 Q Did he tell you where he hauled it to?

13 A No.

14 Q Why didn't you use his numbers in addition to  
15 what Sheri Herron then told you?

10:14AM

16 A I didn't have a documentation of them, so I  
17 didn't use them, and I had documentation for Sheri's  
18 numbers.

19 Q Can you point me to any published literature,  
20 sir, that validates or uses any calculation that you  
21 made in the process of reducing the poultry manure  
22 in the house separately from the litter in  
23 determining an amount as-is or as-removed?

10:15AM

24 MR. GRAVES: Object to form.

25 A It was a calculated number that was based on

10:15AM

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1 litter numbers as well as production numbers and the  
2 difference, and that was done by Dr. Jobes.

3 Q Okay. Can you point to me, sir, any source,  
4 any data, any authority that supports the  
5 calculation method utilized by Dr. Jobes for you in  
6 this case and as reflected on this exhibit, which is  
7 your page A-S1 Page 5?

10:15AM

8 MS. LONGWELL: Object to form.

9 A Yes, an authority is Dr. Jobes.

10 Q And you're relying solely on him then; is that  
11 correct?

10:16AM

12 A Yes, I am.

13 Q Okay, and you don't know what he's relying on  
14 in order to make these calculations in the way of  
15 authority or published paper, do you?

10:16AM

16 MS. LONGWELL: Object to form.

17 MR. GRAVES: Object.

18 A I know that Dr. Jobes is a legitimate  
19 agricultural economist and scientist who has many  
20 years of experience, and I have great confidence in  
21 him.

10:16AM

22 Q I understand all of that, sir, but you don't  
23 know if he has a peer-reviewed or a published  
24 document or a manual of any sort that's relied on by  
25 the industry to make the calculation he's made in

10:16AM

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1 this case, do you?

2 MS. LONGWELL: Object to form.

3 A I didn't look at it.

4 Q Do you know that it exists?

5 MS. LONGWELL: Object to form.

10:16AM

6 A I've already answered that.

7 Q Your answer is you don't know if it exists;  
8 correct?

9 A That is correct.

10 Q Did you ask Dr. Jobes to give it to you so you  
11 could have it in your considered materials?

10:16AM

12 MS. LONGWELL: Object to form.

13 A I did not.

14 Q So I guess technically Dr. Jobes is your  
15 considered material, isn't he?

10:17AM

16 MS. LONGWELL: Object to form.

17 MR. GRAVES: Argumentative.

18 MR. TUCKER: I object to that as nonsense.

19 Q Well, that's the person you relied on to make  
20 this calculation, isn't it?

10:17AM

21 A He's a very important person to me in all of  
22 this, and he's a knowledgeable individual that I  
23 have confidence in.

24 Q And he's the person that did the calculation  
25 for you; you didn't do it; correct?

10:17AM

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1 A Yes, and I understand that that is a standard  
2 operating procedure for people that know how to do  
3 those things.

4 Q You understand that from him; correctly?

5 A Sir, this is not my first rodeo. I've been in 10:17AM  
6 this business for many, many years working with  
7 numerous scientists and people who have experience  
8 in this industry, and I have confidence in a lot of  
9 them, including myself.

10 Q You're not an ag engineer; correct? 10:17AM

11 A I am not an ag engineer.

12 Q You're not an ag economist?

13 A I am not an ag economist.

14 Q All right. You relied solely on Dr. Jobes,  
15 and you didn't get any validating or published 10:18AM  
16 material to support the work he did, did you?

17 A I did not.

18 Q Let's look at Exhibit 42, Dr. Clay. Did you  
19 have any eye strain working on your spreadsheets in  
20 this case? 10:19AM

21 MR. GRAVES: Object to the form.

22 A Well, I suppose. It's -- it hasn't been  
23 nearly as stressful as looking at your documents  
24 today.

25 Q Did you prepare Exhibit No. 42 or did Dr. 10:19AM

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1 as-removed is -- I understand that one very clearly.

2 As-removed is taking it out of the house.

3 Q Do you agree that to make a fair comparison of  
4 items, such as poultry waste and -- or other  
5 manures, comparing it wet to wet or dry to dry makes  
6 an accurate and fair comparison?

10:24AM

7 MS. LONGWELL: Object to form.

8 A Wet to wet -- I'm trying to make sure I  
9 understand. You're saying a fair comparison is to  
10 compare wet to wet versus -- versus dry to dry?

10:24AM

11 Q Correct.

12 A Well, I think that would be reasonable, yes.

13 Q Did you inquire and learn when any of the  
14 poultry integrator companies started operating in  
15 the IRW?

10:24AM

16 A I don't have dates, no.

17 Q In your report, you reported approximately 65  
18 percent of the land area is devoted to farming,  
19 agricultural production. Is that 65 percent  
20 inclusive of woodlands?

10:25AM

21 A Yes.

22 Q And is that all of the woodlands?

23 A It's the bulk of the woodlands that's used for  
24 agriculture.

25 Q Okay, and tell me how it's used for

10:25AM

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1 in the mass balance. Do you recall those  
2 statements?

3 A Yes. I think they called it a mass balance,  
4 and I said I didn't believe that it was designed as  
5 a mass balance. It looked to me like it was  
6 designed as a -- as what is produced in the  
7 watershed predominantly.

10:42AM

8 Q Is that what you said in your report or is  
9 that what you're saying now?

10 A Well, I'm interpreting what I said in the  
11 report. I'm not reading it.

10:42AM

12 Q All right. Tell the court, if you would,  
13 please, what experience you have with conducting or  
14 performing any mass balances.

15 A Well, I've not done many mass balances.

10:42AM

16 Q How many --

17 A But I've read about what the components of  
18 mass balances are.

19 Q How many mass balances have you actually  
20 operated or performed yourself?

10:42AM

21 A I don't know that I've done any.

22 Q Have you received any specific education or  
23 training in the use of performing a mass balance?

24 A Well, personal experience and involvement in  
25 the business.

10:43AM

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1 Q That's not my question. Have you received any  
2 specific training or education for operations or  
3 performing mass balance?

4 A No.

5 Q Do you know if any other experts on the  
6 defendants' team have performed a mass balance for  
7 any or all of the IRW?

10:43AM

8 A Not to my knowledge.

9 Q Do you recall having any discussions in your  
10 conference calls with regard to mass balance being  
11 performed by any or all of the -- or any of the  
12 experts for the defendants?

10:43AM

13 A There was some discussion about mass balance.  
14 Whether the individuals were doing those, I don't  
15 know.

10:43AM

16 Q Okay. My question was specifically with  
17 regard to the defendants' experts, whether or not  
18 discussions were conducted that indicated they were  
19 performing a mass balance. Was that ever discussed  
20 in your presence?

10:44AM

21 A I don't remember that there was discussion  
22 that a mass balance was being performed. I remember  
23 a discussion about a mass balance.

24 Q Okay. Your criticism of Engel and Smith is  
25 that they did not account for all livestock sold or

10:44AM

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1 cattle 887?

2 A Yes.

3 Q And dairy cattle at 1,200?

4 A Yes.

5 Q All right, and those are pounds; correct?

10:51AM

6 A Correct, and from those we made calculations

7 of nitrogen from our aspect and compared it to

8 calculations that the State had, and so those were

9 just checker numbers from the total on a relative

10 basis. Then from that, we calculated the total

10:52AM

11 number that would have access to the streams in the

12 entire watershed. It was about 79 percent of the

13 total cattle that we had -- that we had enumerated.

14 Q All right. Show me what numbers you are

15 dividing to get to the 79 percent.

10:52AM

16 A Okay. It would be the -- well, I can't

17 remember how Dr. Jobes calculated that, but he -- it

18 is -- it's basically a percentage of the cattle from

19 our total calculations versus --

20 Q Do you -- I'm sorry.

10:53AM

21 A -- versus the calculations that would have --

22 that would have represented the 1997 data projected

23 to 2002.

24 Q Okay, and you don't have the ability sitting

25 here today --

10:53AM

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1 A I do.

2 Q -- to do that calculation, do you?

3 A I do. I can't do it quickly and simply.

4 Q Well, it's a matter of dividing two numbers,  
5 isn't it?

10:53AM

6 A Yes.

7 Q And can you identify the two numbers that  
8 should be divided?

9 A Well, I'm having difficulty identifying the  
10 two numbers, and I apologize for that, but I can  
11 tell you that his -- his estimate was 79 percent of  
12 the total cattle in the case of this calculation,  
13 and by using -- by using then the time exposed to  
14 the watershed of loafing versus grazing time, he  
15 calculated then a percentage of manure.

10:53AM

10:54AM

16 Q Tell me, sir, what did you do to verify and  
17 validate the calculations to arrive at the 79.44  
18 percent number?

19 A Nothing.

20 Q Okay. All right. Let me hand you Exhibit 47,  
21 Dr. Clay. Do you recognize that document from your  
22 appendices?

10:54AM

23 A Yes.

24 Q Tell the court what this document is.

25 A This is density of cattle relative to square

10:54AM

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1 mile.

2 Q Okay. Who prepared this map? Let me back up.

3 Who did the calculations that underlie the data that  
4 created this map?

5 A We did the calculations, and Tim Sullivan did 10:55AM  
6 the map.

7 Q All right. When you say we did the  
8 calculation, are you referring to yourself and Dr.  
9 Jobes?

10 A Yes. 10:55AM

11 Q And what part of the calculation did you  
12 perform?

13 A Well, these are the total cattle density -- I  
14 mean, the total cattle numbers per ZIP Code.

15 Q What part of the calculations did you perform 10:55AM  
16 in preparing the underlying data that created the  
17 map?

18 A Well, I participated in the development of  
19 those, and I don't remember specifically which  
20 numbers I wrote down. 10:55AM

21 Q Did you operate the computer with a  
22 spreadsheet in it in order to crunch the numbers?

23 A Dr. Jobes did that.

24 Q All right, and the data that was used came  
25 from the 2002 Ag Census; is that correct? 10:55AM

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1 A That's correct.

2 Q And the category is from sold or inventory?

3 A The category is from the way we calculated it,  
4 which included cattle in inventory of both other  
5 cattle as well as beef cows.

10:56AM

6 Q Okay. So rather than sold, you're using  
7 inventory numbers again; correct?

8 A That is correct.

9 Q All right, and did you rely on -- how did you  
10 place them on the map, based upon subwatersheds or  
11 ZIP Code?

10:56AM

12 A ZIP Code.

13 Q All right, and you did that for both sides,  
14 Arkansas and Oklahoma; correct?

15 A Yes.

10:56AM

16 Q How did you -- were there in your beef cattle  
17 numbers any asterisks shown in the census data that  
18 would not have been picked up in this calculation?

19 A No.

20 Q So the beef -- in fact, it's true, if you look  
21 at that schedule that shows the Ag Census data,  
22 there doesn't appear to be any asterisks in the  
23 columns under the ZIP Codes for the beef categories,  
24 is there?

10:56AM

25 A No.

10:57AM

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1 A Okay. Then in that case, that would mean  
2 cattle, as well as anyone else, poultry people, so  
3 on, and so I do believe that that -- that providing  
4 that education to them on the regulations that exist  
5 are extremely important.

12:47PM

6 Q Do you have an opinion of those who fail to  
7 attend education classes in Oklahoma that are  
8 required as to whether or not that they're acting as  
9 good stewards of the environment?

10 MS. LONGWELL: Object to the form.

12:47PM

11 MR. BOND: Object to the form.

12 MR. GRAVES: And beyond the scope.

13 A Well, I guess I would have to know what the  
14 circumstances are and question if they are truly  
15 applying litter to their property or if they're  
16 applying animal manure to their properties, then  
17 they are obligated by law to get some education.

12:47PM

18 Q I believe you said somewhere in your report  
19 that the State has not produced any evidence of  
20 violations of cattlemen. Is that a fair paraphrase  
21 of your statement of your report?

12:48PM

22 A I think that's right.

23 Q Okay. Have you in your preparation of your  
24 report, and specifically making that statement,  
25 examined ODAFF, Oklahoma Department of Agriculture,

12:48PM

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1 records regarding violations involving poultry  
2 waste?

3 A Well, I did communicate with people about who  
4 -- that might have acquired their 15 points or  
5 whatever, and they didn't have any.

12:48PM

6 Q My question is, did you review the public  
7 documents available of ODAFF records?

8 A I did not review all of the public documents  
9 available.

10 Q All right. Let me hand you what's been marked  
11 as Exhibit 32, and I'll represent to you these are  
12 documents coming from Oklahoma Department of  
13 Agriculture records indicating apparent violations  
14 or problems with regard to the handling and  
15 disposition of poultry waste in accordance to the  
16 records of the ODAFF office. Do you know or have  
17 you heard of a W. A. or Bev Saunders who are poultry  
18 growers?

12:48PM

12:49PM

19 A I have.

20 Q They're also a cattle operation, are they not?

12:49PM

21 A They are.

22 Q And the first page of this document, which is  
23 OKDA 16162, indicates a letter written to W. A. and  
24 Bev Saunders in 2003 for violations of educational  
25 requirements. Do you consider --

12:49PM

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1 reference, and it's signed by Terry Peach. Have you  
2 ever seen a document similar to this where an  
3 adjudication was made with regard to violations of  
4 the Poultry Act?

5 MR. BOND: Object to the form.

12:55PM

6 A No.

7 Q Do you know that the -- whether or not the  
8 laws and regulations of the Poultry Act provide for  
9 fines to be assessed on an occurrence of violations?

10 A They do.

12:55PM

11 Q Do you see Paragraph 3 of this page, 16944,  
12 that there appears to be a hundred dollar penalty  
13 imposed?

14 A I see that.

15 Q Next page is an inspector's report. I don't  
16 know whether yours got highlighted. Look at the  
17 handwritten portion of this document --

12:56PM

18 MR. BOND: Does that have a Bates number?

19 MR. GARREN: Yeah. 17711.

20 Q -- where it starts, however, a litter sample.  
21 Do you see that sentence?

12:56PM

22 A Just a moment, sir.

23 Q Sure.

24 A I'm looking at what I have here.

25 MR. TUCKER: What page are you looking at?

12:56PM

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1 documents provided from ODAFF were provided for this  
2 watershed.

3 A Well, it doesn't say here anywhere.

4 Q Right. I'm not sure what order these are in,  
5 but, yeah, numerical order. I'm just going to skip 12:58PM  
6 through some of these. I don't intend to read all  
7 of these into the Record. It's laborious. Skip  
8 over to Page 21114. You see a letter dated January  
9 24, 2002?

10 MR. TUCKER: Is that pretty far back? 12:59PM

11 MR. GARREN: No. It's in numerical order  
12 on the pages, though they skip.

13 Q This letter states from Michelle Sutton,  
14 Esquire, from administrator, Poultry Program Water  
15 Quality Services to a Michelle Worley in Westville, 12:59PM  
16 that based upon this inspection, you are in  
17 violation of the following: Oklahoma Registered  
18 Poultry Feeding Operations Act laws and rules,  
19 failure to change the name on the waste management  
20 named and inclusion of current litter and soil 12:59PM  
21 tests, and they allow them the opportunity to  
22 rectify the violations. Do you see that?

23 A I'm looking for it. Yes.

24 Q Have you spoken to anybody in the enforcement  
25 area of ODAFF with regard to violations that occur 01:00PM

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1 that may not have imposed fines on the growers or  
2 producers?

3 A No.

4 Q Okay. Did you undertake any inquiry or  
5 investigation into the ODAFF personnel with regard  
6 to whether violations are occurring under the  
7 Poultry Feeding Registration Act in Oklahoma?

01:00PM

8 A No.

9 MR. BOND: Object to the form.

10 A Oh, excuse me.

01:00PM

11 Q Let's skip over to page OKDA 14217. That  
12 appears to be out of order now that I look at it.  
13 It comes after Page 21600.

14 A Okay. The number is 14217?

15 Q Yes, sir. This is a memorandum that was sent  
16 by Mr. Parrish of the ODAFF and was sent to --  
17 according to Mr. Parrish, it was sent to

01:01PM

18 integrators. Do you see in this memorandum where it  
19 says, I've enclosed a list of Oklahoma registered  
20 poultry operations that identify your company as  
21 their integrator, and those operations have not  
22 submitted animal management plans to ODAFF. Do you  
23 see that sentence?

01:01PM

24 A I do see that.

25 Q Would that indicate to you a potential

01:01PM

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1 violation of the law or regulations?

2 MS. LONGWELL: Object to the form.

3 A It does -- what it is, is that they're

4 conducting their business as per usual in an attempt

5 to educate all the people into this law that is

01:01PM

6 being incorporated into the state of Oklahoma.

7 Q Do you see the date of this memorandum?

8 A Yes.

9 Q It's April of '04, isn't it?

10 A It is.

01:02PM

11 Q That's six years after the law went into

12 effect; correct?

13 A That's right. I have not looked at it to find

14 out if these are active poultry producers. I don't

15 have any information from any of these people as to

01:02PM

16 whether these may have been out of business since

17 2002. I don't know.

18 Q All right. Let me just show you some pictures

19 that show up in Cargill files that were produced in

20 this case.

01:02PM

21 A What page are we on?

22 Q We're going to skip past the first colored

23 page insert.

24 MR. TUCKER: We already did that. You mean

25 the next color insert?

01:02PM

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1 tell, can you?

2 A I don't know. I'm -- I'm just saying that  
3 this may be a standard operating procedure for this  
4 person.

5 Q And if this occurred in Arkansas, would this 01:15PM  
6 be in violation of any rules or regulations of  
7 Arkansas, if you know?

8 MS. LONGWELL: Object to form.

9 A Well, likewise, they're not supposed to stack  
10 it in the rain. 01:16PM

11 Q Okay. Would this be an indication of what  
12 appears to be a violation of the handling and  
13 disposition of poultry waste?

14 A It is --

15 MS. LONGWELL: Object to form. Sorry. 01:16PM

16 A Excuse me. It appears to be from what is  
17 presented to me. I don't have enough information  
18 and data to know about it.

19 Q Okay, but in preparing for your report and  
20 making your opinions in that report, you had the 01:16PM  
21 opportunity and availability to go to ODAFF and  
22 examine the records that are on file there, do you  
23 not -- do you agree?

24 MS. LONGWELL: Object to form.

25 MR. BOND: Object to form. 01:16PM

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1 A I did. I did have the opportunity to go to  
2 ODAFF. Early when I tried that, ODAFF wasn't all  
3 that receptive.

4 Q Early is when, sir?

5 A Would have been 2005 or '6 -- '5.

01:16PM

6 Q Was it before June of '05?

7 A I don't remember exactly what date it was, but  
8 it could have been late '05, could have been early  
9 '06.

10 Q When were you hired in this case?

01:17PM

11 A I don't remember.

12 Q Were you hired at the time you went?

13 A Yes. It was shortly after I was hired,  
14 whatever date that is.

15 Q Okay.

01:17PM

16 A And I don't remember that date.

17 Q And did you physically go to the ODAFF records  
18 office?

19 A No. I talked to them on the phone.

20 Q All right, and did they tell you you couldn't  
21 come there to look at records?

01:17PM

22 A They didn't tell me I couldn't come.

23 MR. GRAVES: You guys are talking over each  
24 other again.

25 A Thank you. Thank you very much for reminding

01:17PM

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1 me.

2 Q Did you ask to see any records at ODAFF?

3 A I didn't at that time, to ask to see the  
4 records.

5 Q Did you at any time ask to see records at 01:17PM  
6 ODAFF?

7 A I asked if they would provide me with some  
8 records, but they were not willing to do that.

9 Q And who did you talk to?

10 A I don't -- I probably wrote down a name but I 01:17PM  
11 don't remember the name.

12 Q Okay. Do you know that the poultry integrator  
13 defendants went to ODAFF for several days and pulled  
14 records from their original records and had them  
15 copied? 01:18PM

16 A I don't.

17 Q Did you inquire of the defendants in this case  
18 or their counsel whether or not they had ODAFF  
19 records for you to review before you made the  
20 statement about violations? 01:18PM

21 A I did not.

22 Q Did anybody volunteer to you that those  
23 records were available that they had acquired and  
24 procured from the offices of ODAFF?

25 A No. I made that statement after reading the 01:18PM

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1 deposition.

2 Q Whose deposition -- I'm sorry.

3 A It's on there. The reference is on there.

4 Q Let me hand you what's been marked as Exhibit

5 23. Are you familiar with J. P. Graham and his 01:18PM

6 article of Antibiotic-Resistant Enterococci that's

7 listed here?

8 A I don't remember this one.

9 Q Do you see where it's published in 2008?

10 A Yes. 01:19PM

11 MR. BOND: Has this document been produced,

12 Rick?

13 MR. GARREN: No. It's been downloaded by

14 me.

15 MR. TUCKER: I'm trying to figure out where 01:19PM

16 it was published. Can you tell?

17 Q Looking at the first sentence of the abstract

18 it says, use of antibiotics as feed additives --

19 MR. TUCKER: Can you tell me where this was

20 published? 01:19PM

21 MR. GARREN: Please don't interrupt me. If

22 you'll read the document, Counsel, you might be able

23 to tell on your own. It has a copyright notice on

24 it.

25 MR. TUCKER: I'd appreciate it if you would 01:19PM

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